

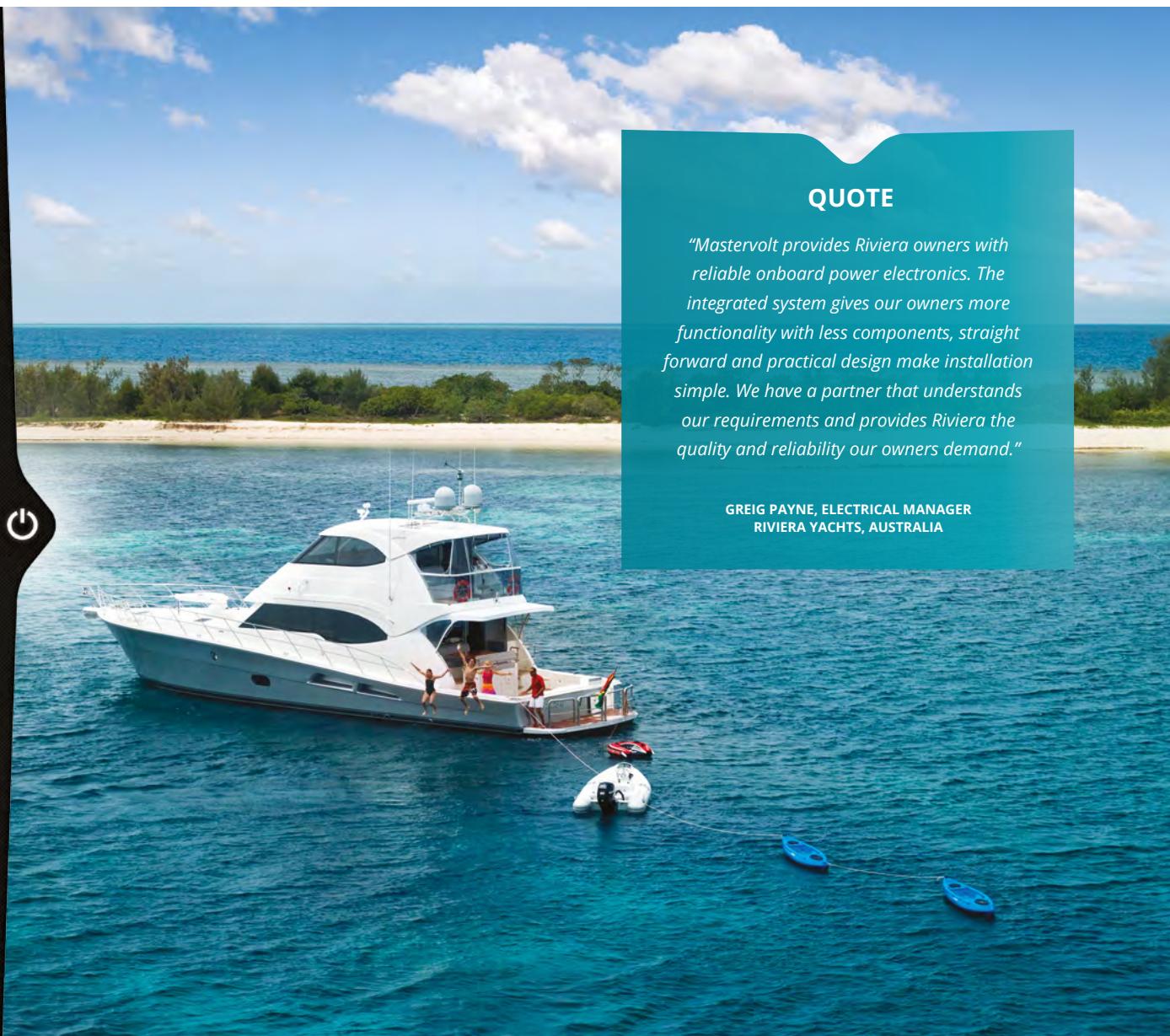
# Digital switching, the future is now

**By decentralising your installation, it is possible to create smarter systems with less cables and installation work. Central switchboards are replaced by decentralised power outputs, which are controlled via a bus system. These outputs power equipment such as lights, pumps and navigation equipment.**

Different input modules can be connected to this bus as well. These input modules – from switches to touch screen panels – control the output modules.

This allows you to control your system from anywhere, even from your mobile phone via text messages.

Digital switching systems give you greater flexibility and facilitate enhanced integration. Without additional components like relays, timer modules and extensive cable trees, it is possible to design a smart system. Digital switching systems result in systems that are easy to operate and offer greater functionality and convenience.



## QUOTE

*"Mastervolt provides Riviera owners with reliable onboard power electronics. The integrated system gives our owners more functionality with less components, straight forward and practical design make installation simple. We have a partner that understands our requirements and provides Riviera the quality and reliability our owners demand."*

GREIG PAYNE, ELECTRICAL MANAGER  
RIVIERA YACHTS, AUSTRALIA



# Networked monitoring system



The CZone™ digital control & monitoring network simplifies installation of electrical systems through the replacement of complicated, cumbersome wiring to switch and fuse panels, with state-of-the-art, robust interfaces and light NMEA 2000 network cable. It also provides a sophisticated solution via the automation of complicated control and monitoring issues associated with today's onboard systems.

## Installation

Builders recognize an immediate benefit with reductions in cable usage, harness weights and installation times. The CZone system also integrates many stand-alone components into one intuitive system. Wiring is dramatically simplified as the CZone system is designed to remove complex switching clusters and wiring runs. Modules can easily be added into the system to best suit the OEM and end-users' needs.

## Configuration

We provide the tools to help you determine the modules needed based on your specific requirements. You can simply program the system with the intuitive CZone configuration tool.

## Integration

The CZone system is NMEA 2000 certified and uses the standard Micro cables and connectors. This also allows a single network backbone to be installed for multiple systems (CZone and other NMEA 2000 devices). Additionally, the CZone system can share certain monitoring functions with other NMEA 2000 compliant screens. The CZone MasterBus Bridge Interface expands the system integration to a whole new level. No other company can bring digital switching, power electronics and marine navigation systems together into one interactive, seamless system.

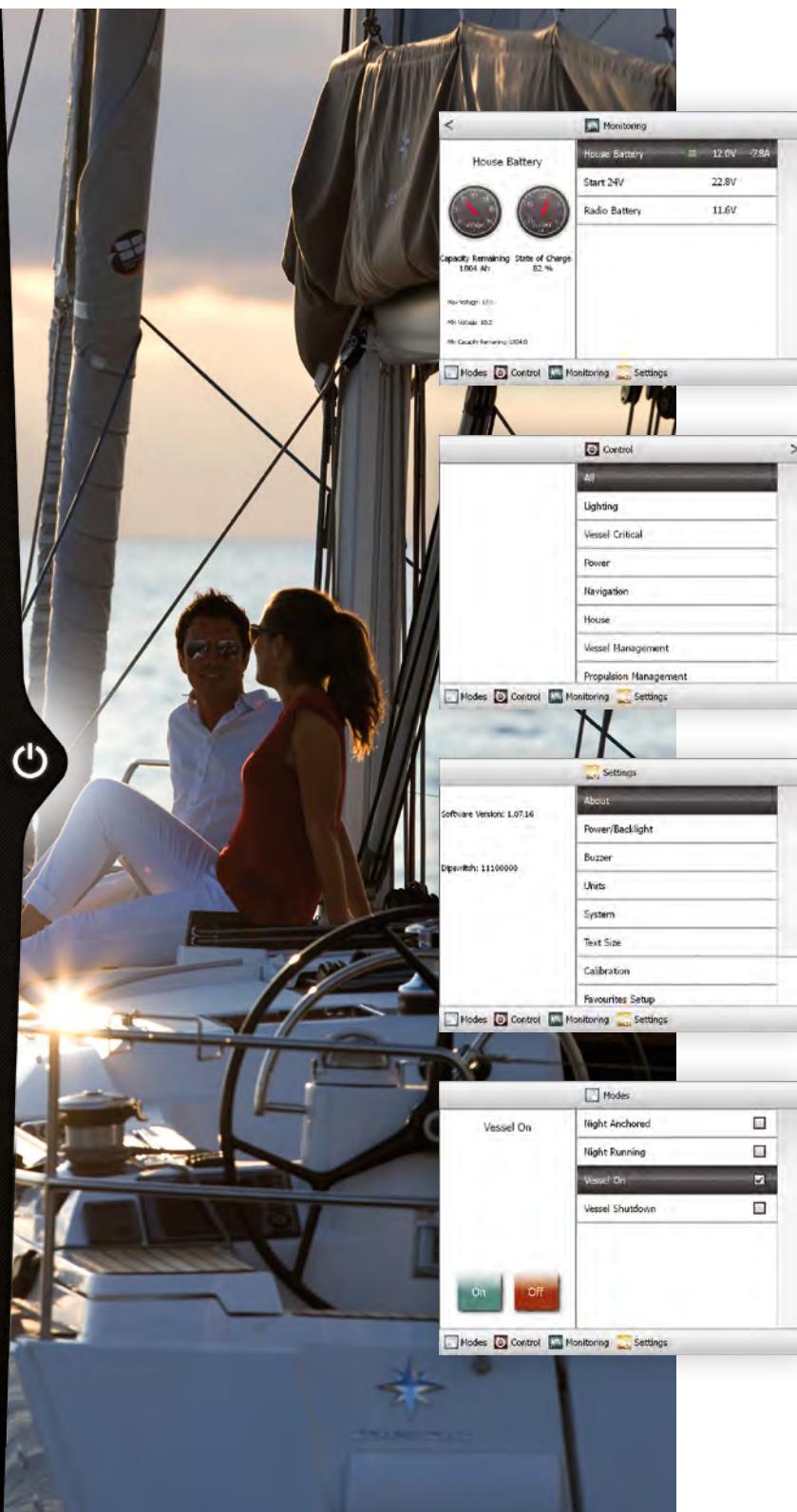


## Versatility & security

The CZone system, designed for 9-32 V systems, features built-in timers, dimmers (including support for halogen lighting), alarms, voltage reducers and load shedding. With safety in mind, the CZone system features a manual bypass. Our No-Single-Failure-Point technology ensures a plug & play system with redundancies that is designed to handle mishaps. If a module is damaged, the system will automatically program the replacement module when it is plugged in. This means any module can be replaced without using high tech service people. Our security features allow custom configurations that can be locked.

# LCD displays

The CZone displays are designed with both the manufacturer and end-user in mind. The easy-to-use display screens put the control of all components directly at your fingertips. Multiple display interfaces can be used in the same system. The scroll and click interface is simple to use in the roughest of seas or bumpiest of roads.



## Monitoring

Allows user to easily monitor AC and DC power, tanks, data, alarms, and circuit status. Presents data in analogue and digital form.

## Control

Breaks down the circuits into easy to identify groups for quick control, i.e. to turn on fresh water pump open 'pumps' group. User can open pumps group and select fresh water pump. This screen also allows the user to monitor the status of the circuit i.e. on, off, fault and current draw.

## Settings

Allows OEM or technician access to the configuration (via password) of a system. No need for a computer to set or change configuration settings such as circuit labels, circuit breaker sizes, etc. (DI only).

## Modes

Ease of operation assured. With one press of the key users can turn on a group of circuits without having to scroll, search for, and turn on the individual circuits that they need for operation of their vessel or vehicle. When leaving, simply press 'systems off' to turn off all non-essential circuits. Entertainment mode allows preset activation of lounge lights, music etc. All functions can be controlled remotely.

CZone displays are the interface between the CZone network and the user. They offer full control of circuits as well as the ability to view important onboard system information, such as tank levels and power levels (for both AC and DC supplies).

Audible and visual alarms with systems diagnostics are also provided. The displays are extremely intuitive to use with simple controls and a menu structure that is easy to follow. The 'modes of operation' feature allows the control of multiple circuits with a single push of a button. For instance, 'night running' mode turns pre-selected lights on to dim levels. These modes are all user configurable. CZone displays can be used to set the CZone system parameters for initial installation and future system maintenance (DI only).

## Power control

- Turn circuits on and off including timer and light dimming control.
- Set modes of operation.

## Tank levels

- View tank level information for multiple tanks and fluid types.

## Data

- Displays standard NMEA 2000 information.
- Displays temperature and pressure values.
- Monitors all circuits connected to the CZone network.

## Alarms/diagnostics

- Logging of circuit run time and on cycles.
- CZone network status reporting.
- Indicates alarms for onboard faults in audible and visual form (bilge pump running, smoke alarm).



Product code	3.5" Display Interface
80-911-0001-00	With power cable, black bezel
80-911-0002-00	With power cable, grey bezel
80-911-0003-00	Display Interface only, black
80-911-0004-00	Display Interface only, grey
Screen size	3.5" transflective QVGA
Protection	IPX7 water ingress
Dimensions, wxhxd	105 x 165 x 62 mm 4.13 x 6.5 x 2.44 inch
Power consumption	at 12 V: 180 mA (standby 130 mA)
	Rotary knob for easy menu navigation

Product code	8" Touch screen
80-911-0064-00	
Screen size	8.4" (SVGA)
IP Level	IP64
Dimensions, wxhxd	234 x 184 x 42 mm 9.21 x 7.24 x 1.65 inch
Brightness (cd/m <sup>2</sup> )	450
Input voltage	12 V DC
Power consumption	20 W

Product code	10" Touch screen
80-911-0065-00	
Screen size	10.4" (SVGA)
IP Level	IP64
Dimensions, wxhxd	276x227x50.7 mm 10.87 x 8.93 x 1.99 inch
Brightness (cd/m <sup>2</sup> )	400
Input voltage	12 V DC
Power consumption	25 W

# Integration partners

**SIMRAD**



**B&G**



**GARMIN**



**Mastervolt's CZone technology has partnered with leading electronics manufacturers including Navico's Simrad, B&G and Lowrance brands and Garmin's glass helm touchscreens\*, making it simple to monitor and control the onboard power system and circuits.**

CZone technology is integrated with easy-to-read graphics into chartplotters and multi-function displays. View CZone monitoring data, tank levels and battery capacity alongside radar, fish finder, video and chart plotter information or navigate to the CZone page to operate any circuit from the intuitive control page.

Integrate various sonar technologies, autopilot, connectivity, apps, engine data and multimedia. CZone mode controls, visible on the touchscreens, allow multiple circuits to be turned on and off with a single touch, all customizable to your boating needs.

With CZone technology, control and monitoring is available at the touch of your fingertips, at the helm or flybridge, at desired locations on the boat or vehicle, programmed into the remote key fob, or from an app on your tablet.

*\* Please check the Mastervolt site for the latest developments on integration partners.*



## QUOTE

*"Garmin strives to provide the easiest and most intuitive user experience to the market, and we've taken it to the next level, integrating Mastervolt's automated power and circuit management with the Garmin GPSMAP 8000 Helm Series. From controlling various lighting configurations to monitoring bait well levels and more, CZone technology puts the simplicity of automated operations at the boater's fingertips."*

DAN BARTEL, VICE PRESIDENT WORLDWIDE SALES  
GARMIN, USA

# Wireless Interface

Monitor and control your onboard systems



Mastervolt has produced a Wireless Interface that allows your iPad to interface with an onboard digital switching system for full monitoring and control of the electrical equipment via a clear and intuitive display. The interface acts as a hub for the seamless connection between the two popular Digital Switching protocols of MasterBus and CZone.

Product code	
80-911-0090-00	Wireless Interface
80-911-0095-00	WI MasterBus connector



## Features:

- User-friendly homepage to monitor and control onboard circuits.
- Integrated control and monitoring of power products including battery chargers and inverters.
- Monitor AC/DC power and batteries.
- Monitor tank levels.
- Receive visible alarms.
- Connect a maximum of three devices simultaneously.
- Ability to personalise homepage to display favourite circuits, modes & monitoring.
- Customize your layout.

## Hardware:

- The Wireless Interface acts as the hub between MasterBus/CZone networks and local WiFi devices.
- NOTE: WI MasterBus connector required for MasterBus connection.
- Ethernet connection to connect to other LANs.
- USB connection for configuration updates.
- Tested to FCC, CE, EMC.
- Power cable and aerial included.

# CZone Interfaces

## Switch Control Interface (SCI)

The Switch Control Interface provides an interface between the CZone network and the traditional mechanical switches with which manufacturers and users are familiar. The SCI simplifies your wiring, supports your existing choice of switches, protects against failures and allows for more installation options.



### Switch Control Interface (SCI)

Single switch position can control multiple OI channels  
Attaches to switch panels via custom SCI cable  
Multiple SCI switches can control single OI channel  
Output for backlighting of switch labels (dimmable)  
Outputs systems on and function/fault codes to systems on LED of switches (dimmable)  
Dimensions, wxhxd:  
156 x 100 x 42 mm  
6-3/32 x 3-29/32 x 1-5/8 inch  
IPX5 water ingress protection  
Programmable switch types  
8 inputs per module (16 individual controls)  
Sequential button press functionality

## Signal Interface (SI)

The Signal Interface connects the CZone system to your external sensors, alarms and switching devices. The SI allows intelligent, automated operation of circuits depending on the state of the input.



### Signal Interface (SI)

Accepts inputs from traditional switch types being used to control outputs  
Accepts inputs from switches to trigger alarm i.e. high water float switch  
Accepts inputs from industry-standard tank senders (0-5V, 10-180 Ohm, 240-33 Ohm)  
Accepts inputs from general voltaic or resistive signals, can be used for controlling outputs or to display a physical position i.e. show a hatch is partially open  
LED status indicators for each input  
Dimensions, wxhxd:  
156 x 100 x 42 mm  
6-3/32 x 3-29/32 x 1-5/8 inch  
IPX5 water ingress protection  
Outputs standard NMEA 2000 sentences  
Resistive input range 0-1000 Ohms  
Voltage sensing input range 0-34 V DC

## Meter Interface (MI)

The Meter Interface accepts inputs from external AC and DC power metering sensors such as: AC and DC voltage and amps, AC kWatts, and DC battery capacity in amp hours and % remaining. All with user definable high and low alarms.



### Meter Interface (MI)

**AC**  
3 x AC voltage inputs (multi voltage)  
2 x AC current inputs  
Calculates true RMS power  
**DC**  
3 x DC voltage inputs (multi voltage)  
2 x DC current inputs  
Calculates battery capacity as ampere hours and percentage charge remaining  
Resolution for current metering down to 0.1 A  
**GENERAL**  
Dimensions, wxhxd:  
156 x 100 x 42 mm  
6-3/32 x 3-29/32 x 1-5/8 inch  
IPX5 water ingress protection  
Outputs standard NMEA 2000 power monitoring sentences

Product code	Product code
80-911-0011-00	80-911-0012-00
Switch Control Interface with seal	Switch Control Interface only

Product code	Product code
80-911-0013-00	80-911-0014-00
Signal Interface with seal and connector	Signal Interface only

Product code	Product code
80-911-0005-00	80-911-0006-00
Meter Interface with seal and plug	Meter Interface only

*Note: High and low alarm levels can be set for all inputs.*

## Output Interface (OI)

The Output Interface provides an intelligent replacement for traditional circuit breaker and fuse panels. It has six high power, robust output channels which provide the power supply, control and fusing for a circuit as well as integrating many other features such as timers and dimmers. Connection to the unit is simple: a large 6-way plug allows connections to cables of up to 16 mm<sup>2</sup> (6AWG) in size, or multiple smaller conductors. No need for specialized crimp terminals and expensive crimp tools to be carried for terminations to CZone, just a blade screwdriver. A protective flexible boot offers protection to the connections from harsh environment conditions.



### Output Interface (OI)

4 levels of backup fusing including manual override (as required by ABYC)

Multiple channels can be bridged together to offer higher current switching

Power consumption 12 V: 85 mA (standby 60 mA)

Dimensions, wxhxd:

200 x 128 x 45 mm / 7-29/32 x 5 x 1-3/4 inch

Small, non-metallic, easy to install case

IPX5 water ingress protection

6 x 20 amps circuits

Programmable software 'fuse' sizes

Product code
80-911-0009-00

Output Interface with connector and protective boot

Product code
80-911-0010-00

Output Interface only

## Motor Output Interface (MOI)

The Motor Output Interface has an output pair for controlling DC motors which require a reversal of polarity to change the direction of their mechanical operation. For example, a DC motor for an electric window mechanism will move the window up or down depending on the polarity of the feed to the motor. The MOI also incorporates two standard output channels as found on the OI.



### Motor Output Interface (MOI)

Single motor control and two normal channels per unit, 20 A per output

Built-in circuit protection

IPX5 water ingress protection

Dimensions, wxhxd:

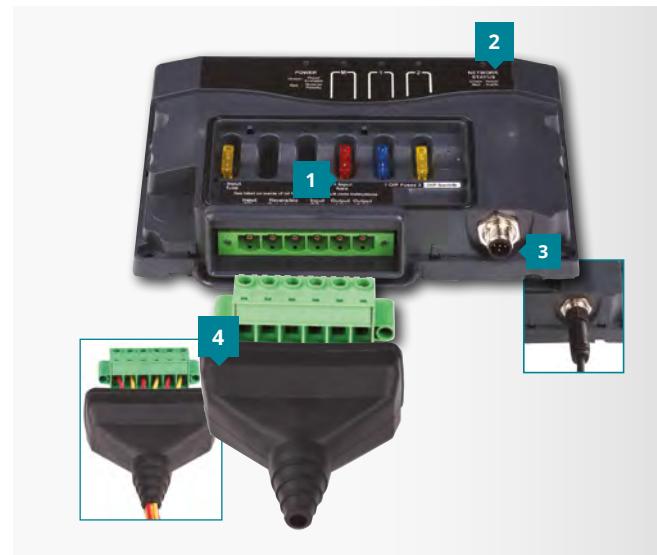
200 x 128 x 45 mm  
7-29/32 x 5 x 1-3/4 inch

Product code
80-911-0007-00

Motor Output Interface with connector and protective boot

Product code
80-911-0008-00

Motor Output Interface only



- 1 Fuses for emergency circuit bypass.
- 2 Network status indicator.
- 3 NMEA 2000 connector.
- 4 Connector and protective boot.

# AC Interfaces

## AC Output Interface (ACOI)

Searching for a simplified way to network, monitor and control onboard AC circuits? The AC Output Interface does it all and provides circuit protection for onboard AC devices. It is easy-to-install, configure and operate the digital control system with pre-wired components for quick connections.

This is a fully customized solution to suit unique installation and application needs, including 'night running' as well as control at multiple locations. It has eight outputs (up to 50 A each), supports multiple pole designs and two separate buss feeds. To make it easy, status LEDs and manual bypass are located right at the enclosure.



Product code

80-911-0069-00

For quotation purposes only.

### AC Output Interface (ACOI)

Full automation of available supply selection.

Eight outputs, maximum of 50 Amps each.

Provides circuit protection and control.

Circuit status and run current displayed for each circuit.

Status of LEDs at enclosure.

Customisable to suit installation requirements.

Manual bypass at enclosure.

Pre-wired for quick connection.

Provision for MCB/RCD's.

Staggered start-up of loads.

Timers.

110 V, 240 V, 110/220 V.

50 or 60 Hz.

Supports multiple pole designs, i.e. double, triple, four pole.

IPX5 enclosure.

Utilises standard DIN rail mounted components for circuit protection and control.

Can support two separate buss feeds i.e. 2 load groups in one box.

Delayed activation of circuits, to allow generators to come up to speed.

Dimensions, hxwxd:

295 x 458 x 130 mm / 11.61 x 18 x 5.1 inch

(enclosure dimensions may change depending on installation requirements)



## AC Mains Interface (ACMI)

A sophisticated source selector or transfer switch, the AC Mains Interface enables the user to specify the AC power source (generator, inverter, grid power). It was developed for use with the CZone digital control system, but may also be used as a stand-alone device.

The ACMI can be programmed to automatically change the supply source when the current rating is exceeded, and includes a manual bypass and user-friendly display screen that ensures easy current, voltage, frequency, and power monitoring. Other features include six monitored, over-current protected main power inputs of up to 100 A each, as well as two outputs, which enables two separate load groups and a parallel option for use with a single source. To simplify installation, the ACMI comes pre-wired.



Product code  
80-911-0068-00

For quotation purposes only.



### AC Mains Interface (ACMI)

Six source inputs up to 100 A (e.g. 2x grid power, 2x generator).
Auto changeover.
Monitoring of channel status (on/off/fault).
Provision for RCDs.
Provides circuit protection and control.
Load shedding.
Manual override at enclosure and via remote panel.
Status of LEDs at enclosure.
Customisable to suit installation requirements.
Pre-wired for quick connection.
Supports multiple pole designs, i.e. double, triple, four pole.
Timer controls.
110 V, 240 V, 110/220 V.
50 or 60 Hz.
IPX5 enclosure.
Utilises standard DIN rail mounted components for circuit protection & control.
Physical and software lockouts between source controls (prevents two sources from becoming connected).
Reverse polarity and bad power supply alarms including auto disconnect and lockouts.
Current, voltage, frequency and power monitoring incorporated (six channels).
Two outputs (load groups), allows for two separate load groups with parallel option for use with single source.
Dimensions, hxwxd: 403 x 630 x 130 mm / 15.8 x 24.8 x 5.1 inch (enclosure dimensions may change depending on installation requirements)



# Digital control accessories

## Single tee connector

Connects a single device into the NMEA backbone.



Product code	80-911-0029-00
--------------	----------------

## 2 Way tee connector

Connects multiple devices into the NMEA backbone.



Product code	80-911-0047-00
--------------	----------------

## 4 Way tee connector

Connects multiple devices into the NMEA backbone.



Product code	80-911-0048-00
--------------	----------------

## Male banking cap

Protects unused tee connector from dust and water.



Product code	80-911-0050-00
--------------	----------------

## Female banking cap

Protects unused tee connector from dust and water.



Product code	80-911-0051-00
--------------	----------------

## Terminating resistors

Use at either end of the NMEA backbone to complete the network.

Each network must have a male and female terminator.



Female	80-911-0030-00
Male	80-911-0031-00

## Extension cable

Carries power and data along backbone to NMEA 2000 devices.



0.5 m / 1.6 ft	Product code 80-911-0026-00
2 m / 6.5 ft	80-911-0027-00
5 m / 16 ft	80-911-0024-00
10 m / 32 ft	80-911-0025-00

## Power cable for Display Interface

Supplies power for the 3.5" Display Interface.



2 pin, 2 m / 6.5 ft	Product code 80-911-0032-00
---------------------	--------------------------------

## Power cable

Provides power to the NMEA 2000 network and devices.



1 m / 3.2 ft	Product code 80-911-0028-00
--------------	--------------------------------

## 90° Elbow connector

Connects cable together in tight spaces. NMEA 2000 network.



Product code	80-911-0046-00
--------------	----------------

## AC transducer

- Includes 3 voltage transformers for up to 3 voltage inputs.
- Dimensions: 69 x 140 x 50 mm / 2.75 x 5.5 x 2 inch



Product code	AC-VSEN-4
--------------	-----------

## CZone wireless remote kit

Simple to set up, wireless remote control. Buttons are configurable for momentary on or latching control of circuits.

- 80 m (250 ft) operating range.
- Rolling code.



Product code	80-911-0045-00
--------------	----------------

**Cable gland for SCI, silicon**



Product code
80-911-0035-00

**Cable gland for SI, silicon**



Product code
80-911-0036-00

**Cable gland for MI, silicon**



Product code
80-911-0033-00

**Terminal block, SI/MI, 8-way**



Product code
80-911-0043-00

**Terminal block, OI/MOI, 6-way**



Product code
80-911-0041-00

**Terminal block, MI, 6-way**



Product code
80-911-0042-00

**Seal boot for OI/MOI 6-wire, silicon**



Product code
80-911-0034-00

**Hole plugs**



3.2 mm, for MI and SI cable glands	Product code
5 mm, for SCI cable glands	80-911-0016-00

5 mm, for SCI cable glands	Product code
80-911-0017-00	

**DC current shunt**

- 450A / 50mV shunt supplied with 80-600-0021-00.
- Dimensions:  
83 x 45 x 44 mm  
3.25 x 2.8 x 2.75 inch.



Product code
LB-450-50

**Through bulkhead adaptor**

For use on the backbone to transition through a waterproof bulkhead or can be used to connect removable equipment such as a computer interface.  
■ NMEA 2000 network.



Product code
80-911-0052-00

**Female field serviceable connector**

For terminating bare NMEA cable.  
■ NMEA 2000 network.



Product code
80-911-0053-00

**Male field serviceable connector**

For terminating bare NMEA cable.  
■ NMEA 2000 network.



Product code
80-911-0054-00

# Digital control accessories

## USB CAN adaptor



Connects PC to CZone network for configuration and system set up.

Product code
80-911-0044-00

## Wireless Interface



Wireless monitoring and control of onboard systems from your tablet.

Product code
80-911-0090-00

## CZone Network Bridge Interface



For isolating sections of a NMEA 2000 network to decrease standby current draw. Isolation when bridging between two CAN networks, (e.g. connecting CZone to Simrad Simnet). For expansion of the NMEA 2000 network when the maximum node limit for the network has been reached (*node = any device connected to the NMEA 2000 network*). Once fitted, a further 40 nodes can be added.

Product code
80-911-0057-00

## Cable assembly

SCI, to suit Rocker switches.



	Product code
0.5 meter	80-911-0018-00
1 meter	80-911-0019-00
2 meter	80-911-0020-00
3 meter	80-911-0021-00
4 meter	80-911-0022-00
5 meter	80-911-0023-00

## Custom Rocker switches

Red or blue systems in operation and backlighting LEDs.



	Product code
ON/OFF, red LED	80-911-0037-00
Mom ON/OFF, red LED	80-911-0038-00
ON/OFF/ON, red LED	80-911-0039-00
Mom ON/OFF/mom ON, red LED	80-911-0040-00
Mom ON/OFF, blue LED	80-911-0066-00
Mom ON/OFF/mom ON, blue LED	80-911-0071-00

## Cable assembly

SCI, to suit push buttons.



	Product code
0.5 meter	80-911-0085-00
1 meter	80-911-0086-00
2 meter	80-911-0087-00
5 meter	80-911-0088-00
8 meter	80-911-0089-00

## Push buttons



	Product code
Momentary (ON)OFF, red LED	80-911-0060-00
Latching ON/OFF, red LED	80-911-0063-00
Momentary (ON)OFF, blue LED	80-911-0062-00
Latching ON/OFF, blue LED	80-911-0061-00

For use with CZone systems only.

- Momentary and latched actuation options available.
- Blue and red circuit status indication LED options.
- 19 mm mounting hole.
- IP67 environmental protection.
- Stainless steel components.
- Maximum 5 Amps each.

### Current transformer



Max. current 150 A AC.  
One CT-10-3 current transformer is supplied with ACSM. A second current transformer must be ordered if a twin line system is in use.  
Supplied with 80-600-0023-00.  
Dimensions: 37.5 x 39 x 14 mm / 1.5 x 1.55 x .55 inch.  
Hole size: 12 mm / 0.5 inch.

Product code
CT-10-3

### Heavy-duty current transformer



Max. current 150 A AC.  
CT-HD is available for systems with large mains cables, too large for CT-10-3 (order separately).  
Dim.: Ø 47 x 10.5 mm / 1.85 x 0.4 inch.  
Hole size: 32 mm / 1.25 inch.

Product code
CT-HD

### Surge protection module



Protect your electronics from being damaged by harmful high voltage spikes. When fitted to the battery supply these modules look for sudden increases in voltage then switch into protection mode to absorb and suppress the high energy spike.

Product code
12 V DC
24 V DC

### CZone MasterBus Bridge Interface



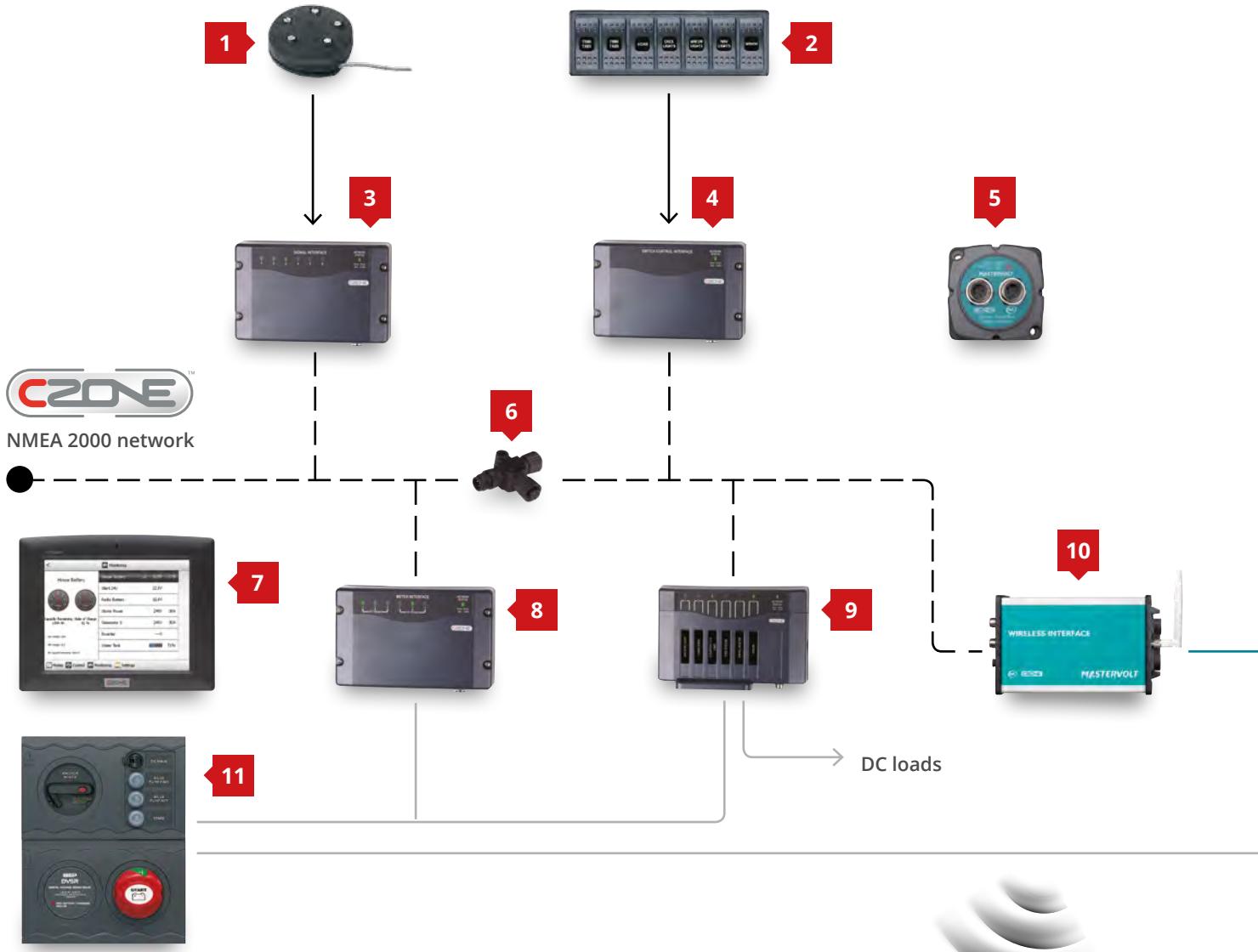
The CZone MasterBus Bridge Interface physically connects the MasterBus and CZone networks together enabling the two networks to communicate and act as one, providing seamless control and monitoring of devices on both networks from either MasterBus or CZone displays.

#### Features/functions:

- Control of Mastervolt inverters and chargers from CZone displays and switches.
- Control of MasterBus output devices (turn lights, pumps, etc. on/off).
- Control of CZone output devices (turn lights, pumps, etc. on/off) via MasterBus displays and switches.
- Display CZone acquired systems information such as tank and power levels on MasterBus displays.
- Display MasterBus acquired systems information such as tank and power levels on CZone displays.
- Transfers alarms between both systems.

CZone MasterBus Bridge Interface	
Product code	80-911-0072-00
MasterBus powering	no
Dimensions, hwxwd	69 x 69 x 50 mm 2.7 x 2.7 x 2 inch
Weight	145 g / 0.32 lb
Protection degree	IP65
Delivered with	MasterBus cable adapter, MasterBus Terminator, user's manual

# Fully integrated CZone MasterBus system



- 1** Ultrasonic tank sender
- 2** Switch cluster
- 3** Signal Interface
- 4** Switch Control Interface
- 5** CZone MasterBus Bridge Interface
- 6** NMEA T-connector
- 7** 10" Touch screen
- 8** Meter Interface
- 9** Output Interface
- 10** Wireless Interface
- 11** Battery distribution panel



